

AD-A246 884



000P0PHM/USA/000/NADTR91112

(2)

PERFORMANCE ORIENTED PACKAGING TESTING
OF
WIREBOUND WOOD BOX CONTAINING
TWO M2A1 AMMUNITION BOXES
FOR
PACKING GROUP II
HAZARDOUS MATERIALS

BY:

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Performing Activity:

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Crane, Indiana 47522-5000

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SELECTED
MAR 02 1992
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JANUARY 1992

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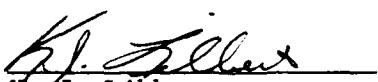
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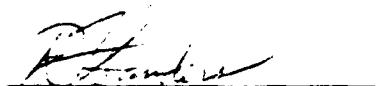
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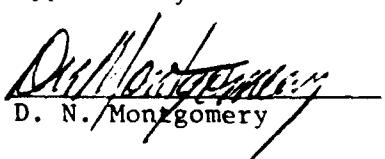
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SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Unlimited Distribution	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S) DODPOPHM/USA/DOD/NADTR 91112		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION Naval Weapons Support Center	6b. OFFICE SYMBOL (If applicable) 5053	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) Crane, IN 47522		7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION Naval Weapons Support Center	8b. OFFICE SYMBOL (If applicable) 502	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code) Crane, IN 47522		10. SOURCE OF FUNDING NUMBERS	
11. TITLE (Include Security Classification) (U) Performance Oriented Packaging Testing of Wirebound Wood Box Containing two M2A1 Ammunition Boxes for Packing Group II Hazardous Materials.	PROGRAM ELEMENT NO. PROJECT NO. TASK NO. WORK UNIT ACCESSION NO.		
12. PERSONAL AUTHOR(S) Kerry J. Libbert			
13a. TYPE OF REPORT	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) 01-16-92	15. PAGE COUNT 11
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	Hazardous Materials Wirebound Wood Box Performance Oriented Packaging M2A1 Ammunition Box
19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
A wirebound wood box containing two M2A1 Ammunition Boxes was tested for conformance to Performance Oriented Packaging criteria established by the United Nations Recommendations on the Transport of Dangerous Goods. The package was tested with a gross weight of 121 pounds (55 kilograms) and met the requirements for Packing Group II Solid Hazardous Materials.			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL Kerry J. Libbert		22b. TELEPHONE (Include Area Code) (812) 854-1025	22c. OFFICE SYMBOL 5053

INTRODUCTION

A wirebound wood box containing two M2A1 Ammunition Boxes was tested to ascertain whether the container would meet the requirements of Performance Oriented Packaging (POP) as specified by the United Nations Recommendations on the Transport of Dangerous Goods Document, ST/SG/AC.10/1, Revision 6, Chapters 4 and 9. A base level vibration test was also conducted in accordance with the rulings specified in the Federal Register/Vol. 55, No. 246/Friday, December 21, 1990/Final Rule. The objectives were to evaluate the adequacy of the container in protecting hazardous materials.

The M2A1 box is made of steel and has a hinged lid with a handle on top. The wirebound wood box meets the requirements of PPP-B-585 and PPP-B-46506. Figures 1 and 2 show typical packaging configurations.

TESTS PERFORMED

1. Drop Test

This test was performed in accordance with ST/SG/AC.10/1, Chapter 9, Paragraph 9.7.3. Three containers were used throughout the test series. The drop height was 1.2 meters and the drop sequence was as follows:

- a. Flat on Bottom
- b. Flat on Top
- c. Flat on Long Side
- d. Flat on Short Side
- e. One Corner

The test was performed at ambient temperature ($70^{\circ} + 20^{\circ}$ F). The contents of the container should be retained within its packaging and exhibit no damage liable to affect safety during transport.

2. Stacking Test

This test was performed in accordance with ST/SG/AC.10/1, Chapter 9, Paragraph 9.7.6. Three different containers were tested, each with a stack weight of 2400 pounds. The test was performed for 24 hours. After the allowed time, the weight was removed and the container examined. Any leakage, deterioration, or distortion which could adversely affect transport or reduce its strength or cause instability in stacks of packages is cause for rejection.

3. Base Level Vibration Test

This test was performed in accordance with the Federal Register/Vol 55, No. 246/Friday, December 21, 1990/Final Rule. Three sample containers were loaded with steel weights and closed as for shipment. Each container was placed on a vibrating



Quality Codes	
Dist	Avail and/or Special
A-1	

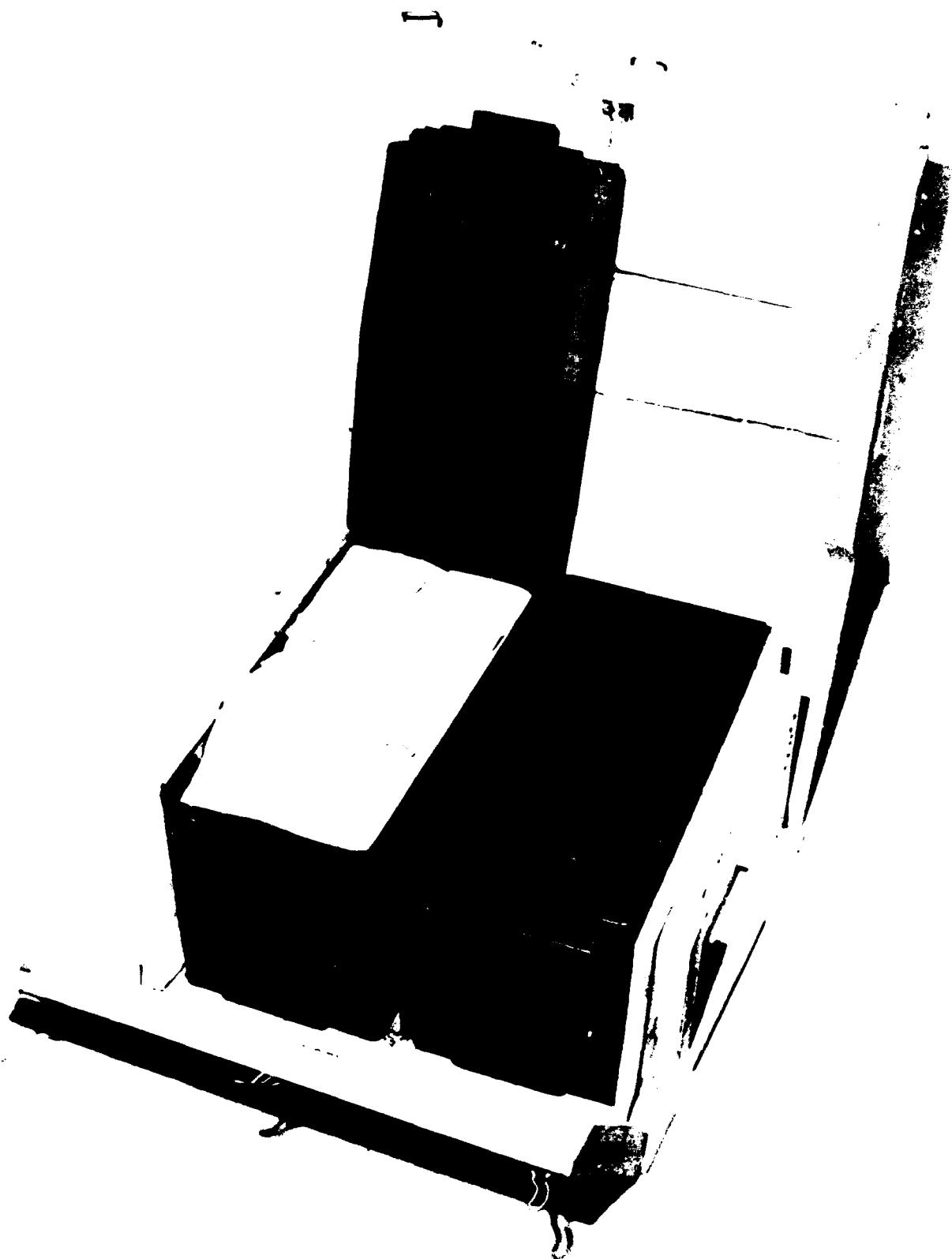


Figure 1. Typical packaging configuration of items packaged in M2A1 Ammunition Boxes and wirebound wool box.

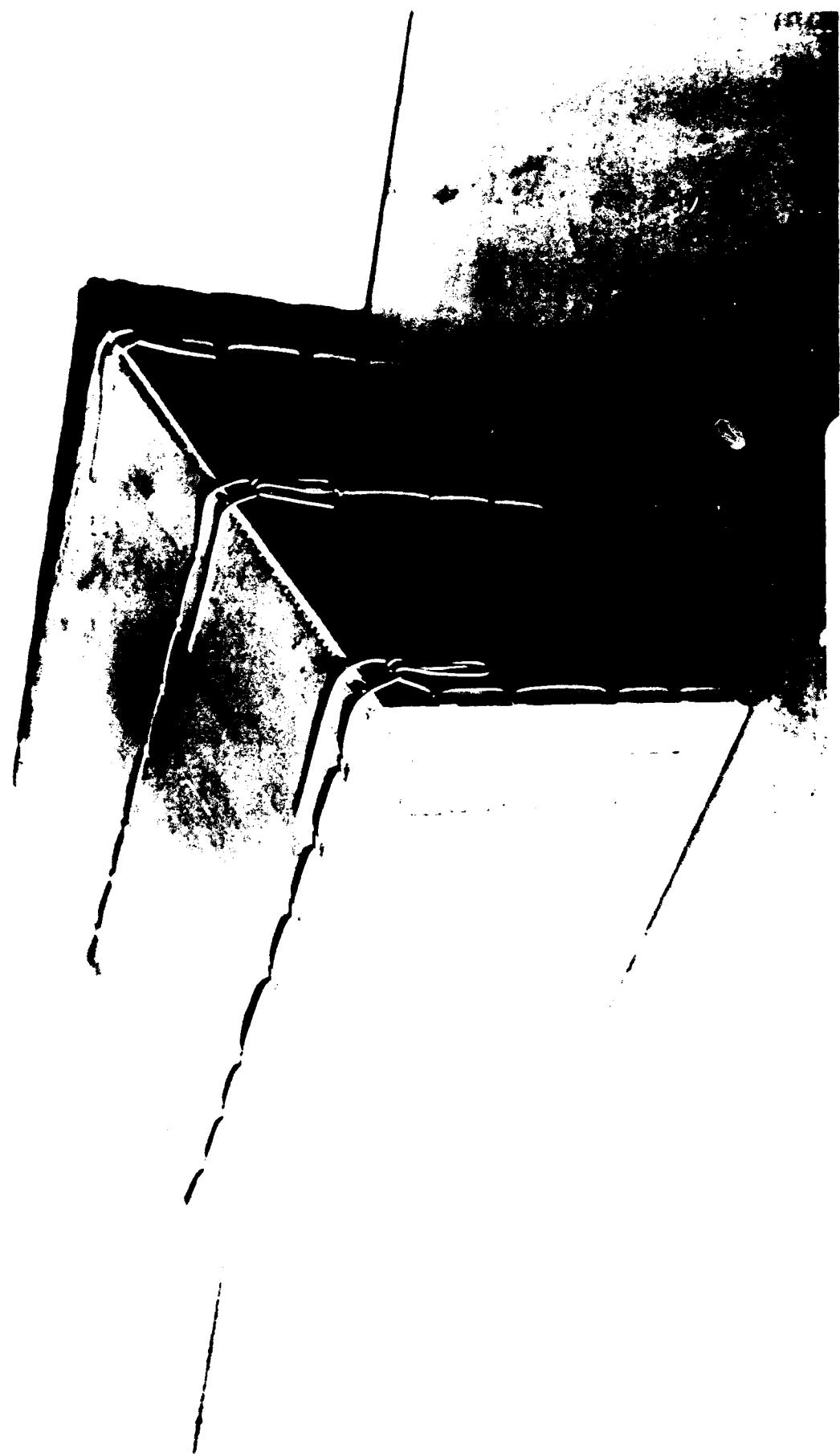


Figure 2. Wirebound wood box
closed for shipment.

platform that had a vertical double-amplitude (peak-to-peak displacement) of one inch. The packages were constrained horizontally to prevent them from falling off the platform, but were free to move vertically, bounce and rotate. The test was performed for one hour at a frequency that caused each point of the container bottom to be raised from the platform 1/16-inch. A 1/16-inch thick metal strip was passed between the bottom of the container and the platform.

TEST RESULTS

1. Drop Test

Satisfactory.

2. Stacking Test

Satisfactory.

3. Base Level Vibration Test

Satisfactory.

DISCUSSION

1. Drop Test

After each drop the container was inspected for any damage which would be cause for rejection. Final inspection revealed minor damage to the boxes, but no spillage of contents.

2. Stacking Test

Three containers were individually tested. Each container was visibly inspected after the 24-hour period was over. There was no leakage, distortion, or deterioration to the container as a result of this test.

3. Base Level Vibration Test

Immediately following the vibration test, each container was removed from the platform, turned on its side and observed for any evidence of leakage. All latches remained fastened and there was no evidence of leakage of contents.

PASS/FAIL (UN CRITERIA)

The criteria for passing the drop test is outlined in Paragraph 9.7.3.5 of ST/SG/AC.10/1 and states the following: "Where a packaging for solids undergoes a drop test and its upper face strikes the target, the test sample passes the test if the entire contents are retained by an inner packaging or inner receptacle (e.g., a plastic bag), even if the closure is no longer sift-proof".

The criteria for passing the stacking test is outlined in Paragraph 9.7.6.3 of ST/SG/AC.10/1 and states the following: "No test sample should show any deterioration which could adversely affect transport safety or any distortion liable to reduce its strength or cause instability in stacks of packages".

PASS/FAIL (FEDERAL REGISTER CRITERIA)

The criteria for passing the Base Level Vibration Test is outlined in the Federal Register/Vol. 55, No. 246/Friday, December 21, 1990/Final Rule and states the following: "Immediately following the period of vibration, each package shall be removed from the platform, turned on its side and observed for any evidence of leakage. Rupture or leakage from any of the packages constitutes failure of the test".

REFERENCE MATERIAL

United Nation's "Recommendations on the Transport of Dangerous Goods", ST/SG/AC.10/1, Revision 6

49 CFR Part 107, et al. Performance Oriented Packaging Standards, Federal Register/Vol. 55, No. 246/Friday, December 21, 1990/Final Rule

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DATA SHEET

CONTAINER:

Wirebound Wood Box Containing two M2A1 Ammunition Boxes

Type: 4C1

UN Code: See Table I

Specification Number:
PPP-B-585
MIL-B-46506

Material:
Wood

Gross Weight:
55.0 kg
(121 pounds)

Dimensions:
.32m L x .37m W x .21m H
(12.53" L x 14.44" W x 8.12" H)

Closure (Method/type):
Wire loops (4 ea.)

Tare Weight:
8.1 kg
(17.8 pounds)

Additional Description: Two M2A1 Ammunition Boxes (Drawing 19200-7553296) packed inside a wirebound wood box (PPP-B-585 or MIL-B-46506).

PRODUCTS:

See Table I

Proper Shipping Name: See Table II

United Nations Number: See Table I

United Nations Packing Group: II

Physical State: Solid

Amount Per Container: See Table I

Net Weight: Varies

TEST PRODUCT:

Name: Steel rods

Physical State: Solid

Size : .11m L x .02m Dia
(4.50" L x 1.00" Dia)

Quantity : 102

Dunnage: Foam polyethylene, PPP-C-1752
Gross Weight: 55.0 kg (121 lbs.)

TABLE I

DODIC OR NALC	NSN	HM ITEM	TYPE	PACKING DRAWING	HAZ. CL.	UN NO.	# PER CNTR.	GROSS WT. KG
A011	1305-00-892-4254	12 GA	XM162	10535779	1.4S	0012	240	17.8
A011	1305-01-232-8338	12 GA	M162	9396206	1.4S	0012	320	24.1
A014	1305-00-147-5568	12 GA	#7 1/2	10535779	1.4S	0012	240	17.8
A017	1305-00-146-1187	12 GA	#9	10535779	1.4S	0012	240	17.8
A019	1303-00-560-2090	12 GA			1.4S	0012	350	27.2
A020	1305-00-782-9616	12 GA	XM257		1.4S	0012	240	20.4
A059	1305-01-155-5459	5.56MM	M855	12551963	1.4S	0012	1680	35.0
A059	1305-01-155-5462	5.56MM	M855	12551963	1.4S	0012	1680	30.4
A063	1305-01-155-5457	5.56MM	M856	12551963	1.4S	0012	1640	30.0
A064	1305-01-131-5246	5.56MM	M855/M856	12551963	1.4S	0012	800	21.3
A064	1305-01-156-7584	5.56MM	M855/M856	12551963	1.4S	0012	800	21.3
A066	1305-00-069-0869	5.56MM	M193	12551963	1.4S	0012	1440	23.3
A066	1305-00-773-1257	5.56MM	M193	12551963	1.4S	0012	1120	23.1
A066	1305-00-926-3970	5.56MM	M193	12551963	1.4S	0012	1640	29.3
A068	1305-00-009-5568	5.56MM	M196	12551963	1.4S	0012	1440	23.3
A068	1305-00-009-5569	5.56MM	M196	12551963	1.4S	0012	1640	29.3
A068	1305-00-914-4719	5.56MM	M196	12551963	1.4S	0012	1640	29.3
A068	1305-00-965-0832	5.56MM	M196	12551963	1.4S	0012	1440	23.3
A071	1305-00-005-8006	5.56MM	M193	12551963	1.4S	0012	1680	31.2
A071	1305-00-926-3930	5.56MM	M193	12551963	1.4S	0012	1680	31.2
A071	1305-01-255-6276	5.56MM	M193	12551963	1.4S	0012	1680	31.2
A073	1305-00-935-9253	5.56MM	M193/M196	12551963	1.4S	0012	1800	33.3
A075	1305-01-155-5464	5.56MM	M200	12551963	1.4S	0014	800	16.6
A075	1305-01-174-9278	5.56MM	M200	12551963	1.4S	0014	800	16.6
A080	1305-00-005-8005	5.56MM	M200		1.4S	0014	2080	25.0
A080	1305-00-182-3217	5.56MM	M200	12551963	1.4S	0014	2280	25.2
A080	1305-00-764-8436	5.56MM	M200		1.4S	0014	2080	25.0
A086	1305-00-305-0902	.22CAL	LONG RIFLE	7553769	1.4S	0012	10200	45.4
A091	1305-00-810-8249	.22CAL	MATCH	7553769	1.4S	0012	10200	45.4
A093	1305-00-585-4945	.22CAL	MATCH	7553769	1.4S	0012	10200	45.4
A110	1305-00-752-8088	7.62MM	M82	8594726	1.4S	0014	840	32.9
A111	1305-00-341-5129	7.62MM	M82	10542678	1.4S	0014	600	27.3
A112	1305-00-008-8894	7.62MM	M82	10523070	1.4S	0014	1200	26.6
A112	1305-00-882-5677	7.62MM	M82	7553747	1.4S	0014	920	33.3
A112	1305-00-990-5594	7.62MM	M82	9362607	1.4S	0014	1200	26.6
A124	1305-00-882-5678	7.62MM	M62	7553747	1.4S	0012	920	33.3
A130	1305-00-147-2989	7.62MM	M80	8594726	1.4S	0012	840	32.9
A130	1305-00-231-4630	7.62MM	M80	8594726	1.4S	0012	840	32.9
A130	1305-00-542-1219	7.62MM	M80	8594726	1.4S	0012	840	32.9
A130	1305-00-752-8837	7.62MM	M80	8594726	1.4S	0012	840	32.9
A130	1305-00-914-4675	7.62MM	M80	8594726	1.4S	0012	840	32.9
A131	1305-00-143-7163	7.62MM	M80/M62	9362607	1.4S	0012	600	27.3
A136	1305-00-064-2896	7.62MM	M118	9362607	1.4S	0012	920	33.3
A140	1305-00-926-4017	7.62MM	M62	9362607	1.4S	0012	920	33.4
A143	1305-01-098-9652	7.62MM	M80	10542678	1.4S	0012	600	27.3
A171	1305-01-120-0970	7.62MM	M852	9362607	1.4S	0012	920	33.4
A224	1305-00-301-1670	.30CAL	M1909	7553734	1.4S	0014	960	26.8
A230	1305-00-305-0908	.30CAL	M25	7553807	1.4S	CJ12	800	30.8

TABLE I

DODIC OR NALC	NSN	HM ITEM	TYPE	PACKING DRAWING	HAZ. CL.	UN NO.	# PER CNTR.	GROSS WT. KG
A237	1305-00-305-0904	.30CAL	M1	10533981	1.4S	0012	800	30.0
A246	1305-00-565-2636	.30CAL	M72	8593309	1.4S	0012	800	31.7
A358	1305-01-307-5036	9MM	M939	12913959	1.4S	0012	2000	30.5
A360	1305-00-935-6164	9MM	M1		1.4S	0012	3072	44.0
A363	1305-01-172-9558	9MM	M882	9396206	1.4S	0012	2000	36.2
A365	1305-00-451-8203	14.5MM	M181	11738800	1.4S	0012	560	46.3
A366	1305-00-451-2894	14.5MM	M182	11738800	1.4S	0012	560	46.3
A367	1305-00-451-2895	14.5MM	M183	11738800	1.4S	0012	560	46.3
A400	1305-00-007-5557	.38CAL	M41	9396206	1.4S	0012	2400	42.8
A400	1305-00-322-6391	.38CAL	M41	9396206	1.4S	0012	2400	42.8
A404	1305-00-123-0548	.38CAL	BALL	9396206	1.4S	0012	2400	42.8
A404	1305-00-348-8650	.38CAL	BALL	9396206	1.4S	0012	2400	42.8
A475	1305-00-147-5904	.45CAL	M1911	7553728	1.4S	0012	2000	46.4
A475	1305-00-301-1685	.45CAL	M1911	9396206	1.4S	0012	2000	48.6
A476	1305-00-753-2304	.45CAL	M9	9396206	1.4S	0014	2000	17.7
A480	1305-00-301-1686	.45CAL	M1	9396206	1.4S	0012	2000	53.1
A482	1305-00-752-7910	.45CAL	BALL	9396206	1.4S	0012	2000	46.4
A483	1305-00-892-2526	.45CAL	M1911	9396206	1.4S	0012	2000	48.6
A541	1305-00-585-5194	.50CAL	M20	12576456	1.4G	0300	240	35.9
A543	1305-00-028-6601	.50CAL	M20	12576456	1.4G	0300	200	35.0
A555	1305-00-028-6574	.50CAL	M33	12576456	1.4G	0339	200	35.0
A557	1305-00-028-6583	.50CAL	M33/M17	12576456	1.4C	0339	200	35.0
A574	1305-00-028-6611	.50CAL	M48		1.4C	0339	208	31.8
A574	1305-00-153-0269	.50CAL	M48		1.4C	0339	208	31.8
A574	1305-00-164-5343	.50CAL	M48A1	12576456	1.4C	0339	220	34.8
A574	1305-00-542-0408	.50CAL	M48A1	12576456	1.4C	0339	180	19.4
A574	1305-00-554-6745	.50CAL	M48A1	12576456	1.4C	0339	200	34.8
A576	1305-00-003-8803	.50CAL	M8/M20	12576456	1.4G	0300	200	35.0
A576	1305-00-028-6603	.50CAL	M8/M20	12576456	1.4G	0300	200	35.0
A579	1305-00-965-0553	.50CAL	T249E2	12576456	1.4C	0339	220	34.8
A585	1305-00-618-2400	.50CAL	M20	7553346	1.4G	0300	200	35.0
A589	1305-00-689-4709	.50CAL	M8/M20	12576456	1.4G	0300	170	31.1
A589	1305-00-752-7891	.50CAL	M8/M20	8596993	1.4G	0300	180	33.4
A590	1305-00-689-4738	.50CAL	M8/M17	9332395	1.4G	0300	170	31.1
A598	1305-01-078-4879	.50CAL	M1A1	12576456	1.4C	0338	200	35.0
A599	1305-01-085-5118	.50CAL	M1A1	9332395	1.4C	0338	170	31.1
A605	1305-00-935-2109	.50CAL	M33	12576456	1.4C	0339	170	31.1
A606	1305-01-250-8162	.50CAL	MK211-0		1.4G	0300	240	36.0
A607	1305-01-249-6888	.50CAL	MK211/M20	7553346	1.4G	0300	200	35.0
A608	1305-01-251-2581	.50CAL	MK211/M17	7553346	1.4G	0300	200	35.0
A680	1395-01-082-1718	22MM	M744	2128382	1.2G	0015	40	28.6
A681	1305-01-082-1719	22MM	M745	2128382	1.2G	0015	40	28.6
A682	1305-01-082-1720	22MM	M746	2128382	1.2G	0015	40	28.6
A683	1305-01-082-4111	22MM	M747	2128382	1.2G	0015	40	28.6
B475	1310-00-133-9413	40MM	M676	9209205	1.4G	0197	44	20.8
B476	1310-00-179-1159	40MM	M679	9209205	1.4G	0197	44	20.8
B477	1310-00-179-1163	40MM	M680	9209205	1.4G	0197	44	20.8
B479	1310-00-179-1170	40MM	M682	9209205	1.4G	0197	44	20.8

TABLE I

DODIC OR NALC	NSN	HM ITEM	TYPE	PACKING DRAWING	HAZ. CL.	UN NO.	# PER CNTR.	GROSS WT. KG
B504	1310-00-541-6148	40MM	M661	9209205	1.4G	0312	44	20.8
B505	1310-00-541-6149	40MM	M622	9209205	1.4G	0312	44	20.8
B506	1310-00-541-6150	40MM	M713	9209205	1.4G	0197	44	20.8
B508	1310-00-541-6152	40MM	M715	9209205	1.4G	0197	44	20.8
B509	1310-00-541-6153	40MM	M716	9209205	1.4G	0197	44	20.8
B519	1310-01-107-5404	40MM	M781	9209205	1.4C	0339	44	20.8
B535	1310-00-159-3198	40MM	M583A1	9209205	1.4G	0312	44	20.8
B535	1310-00-922-9780	40MM	M583	9209205	1.4G	0312	44	20.8
B536	1310-00-922-9784	40MM	XM585	9209205	1.4	0312	44	20.8
D003	1320-00-171-0760	CHARGE	M509	9378206	1.1D	0060	48	12.4
G839	1330-00-892-4106	7.62	M64	10521851	1.4S	0014	500	17.9
G839	1330-01-077-4291	7.62MM	M64	9362607	1.4S	0014	1320	29.2
G841	1330-00-764-8435	5.56MM	M195	12551963	1.4S	0014	2280	28.0
G841	1330-00-926-4011	5.56MM	M195		1.4S	0014	1880	25.8
K031	1345-00-538-5452	IGNITER		2128282	1.4G	0325	44	11.6
K531	1365-00-113-5818	GREN.	M32		1.4G	0301	40	13.2
K886	1365-00-159-3310	FUZE	M209	36-7-25	1.4G	0317	120	25.0
L275	1370-00-567-2817	SIGNAL	MK13-0	2128249	1.4G	0191	36	16.0
L283	1370-01-144-3561	SIGNAL	MK124-0	2128249	1.4G	0191	36	16.0
L302	1370-00-453-9904	SIGNAL	WHITE		1.3G	0054	700	29.0
L303	1370-00-453-9905	SIGNAL	YELLOW		1.3G	0054	700	29.0
L304	1370-00-484-1396	SIGNAL	GREEN		1.3G	0054	700	29.0
L328	1370-00-484-1397	SIGNAL	RED		1.3G	0054	700	29.0
L338	1370-00-453-9906	SIGNAL	WH. SMOKE		1.3G	0054	700	29.0
L344	1370-00-484-1399	SIGNAL	RED SMOKE		1.3G	0054	700	29.0
L345	1370-00-484-1400	SIGNAL	YE. SMOKE		1.3G	0054	700	29.0
L346	1370-00-498-0204	SIGNAL	GR. SMOKE		1.3G	0054	700	29.0
L366	1370-00-397-4223	SIMUL.	M74A1	2128267	1.3G	0335	30	14.3
L373	1370-01-006-3594	SIMUL.	AIRBURST	2128323	1.1D	0168	90	15.3
L596	1370-00-283-9451	SIMUL.	M110	2128171	1.3G	0050	8	14.2
L598	1370-00-283-9443	SIMUL.	M117	2128179	1.3G	0335	50	15.5
L599	1370-00-283-9444	SIMUL.	M118	2128176	1.3G	0335	50	14.4
M020	1375-00-781-9066	CHARGE	MK45-0		1.1D	0048	24	13.9
M174	1377-00-512-2886	.50CAL	IMPULSE		1.4C	0276	154	21.9
M174	1377-00-896-3694	.50CAL	IMPULSE		1.4C	0276	168	22.0
M418	1375-00-223-0099	CHARGE	MK47-0	2128063	1.1D	0048	4	11.4
M630	1375-00-262-1661	F. D.	M1	2128158	1.4S	0349	60	15.3
M670	1375-00-262-1674	FUZE	M70C	2128159	1.4S	0105	8	12.2
M766	1375-00-283-9452	FUZE	M60	2128182	1.4S	0131	60	12.4
M862	1375-00-113-7677	SQUIB	S-75	2128185	1.4S	0454	200	10.4
M957	1375-01-004-1085	CHARGE	MK47-1	2128063	1.1D	0048	4	11.4
ML04	1375-01-037-5428	CUTTER	MK23-0	5012952	1.1D	0048	12	11.7
ML05	1375-01-037-5429	CUTTER	MK24-0	5012939	1.1D	0048	4	20.6
N248	1390-00-993-5691	FUZE	M565		1.4B	0257	16	24.8
N276	1390-00-169-5415	FUZE	M501A1	8861213	1.4B	0257	16	18.9
N276	1390-00-892-4897	FUZE	M501	8861213	1.4B	0257	16	18.9
N276	1390-00-935-6144	FUZE	M501	8861213	1.4B	0257	16	18.9
N278	1390-00-889-2044	FUZE	M564	8861213	1.1D	0408	16	25.3

TABLE I

DODIC OR NALC	NSN	HM ITEM	TYPE	PACKING DRAWING	HAZ. CL.	UN NO.	# PER CNTR.	GROSS WT. KG
N278	1390-01-032-6130	FUZE	M564	8861213	1.1D	0408	16	25.3
N285	1390-00-805-0692	FUZE	M577A1	8861213	1.4D	0410	16	19.9
N285	1390-01-158-8194	FUZE	M577A1	8861213	1.4D	0410	16	19.9
N286	1390-00-169-5864	FUZE	M582A1	8861213	1.1D	0408	16	20.5
N286	1390-01-158-8193	FUZE	M582A1	8861213	1.1D	0408	16	20.5
N289	1390-01-181-6038	FUZE	M762	8861213	1.4		16	17.9
N290	1390-01-283-6532	FUZE	M767	8861213			16	
N291	1390-01-309-6452	FUZE	M732A2	8861213	1.2		16	22.6
N308	1390-00-143-7008	FUZE	M524A6	8861213	1.1D	0408	16	19.0
N308	1390-00-965-0570	FUZE	M524A5	8861213	1.1D	0408	16	19.0
N311	1390-00-892-4898	FUZE	M572	8861213	1.1D	0408	16	25.3
N326	1390-00-881-7635	FUZE	M508A1	8861213	1.1B	0106	16	25.3
N330	1390-00-926-3973	FUZE	M78	8861213	1.1B	0106	16	30.4
N331	1390-00-676-7837	FUZE	M78A1	8861213	1.1B	0107	16	30.4
N331	1390-00-926-3932	FUZE	M78A1	8861213	1.2B	0106	16	30.4
N334	1390-00-182-3029	FUZE	M567	8861213	1.1B	0106	16	19.4
N335	1390-00-187-5392	FUZE	M557	8861213	1.1B	0106	16	19.4
N335	1390-00-892-4302	FUZE	M557	8861213	1.1B	0106	16	19.4
N335	1390-01-080-4171	FUZE	M557	8861213	1.4B	0257	16	19.4
N340	1390-00-574-7705	FUZE	M739	8861213	1.1D	0408	16	20.9
N340	1390-01-080-9447	FUZE	M739	8861213	1.2D	0409	16	20.9
N340	1390-01-132-7481	FUZE	M739A1	8861213	1.2D	0409	16	20.9
N402	1390-00-764-9124	FUZE	M532	8861213	1.1B	0106	16	19.0
N459	1390-01-162-3841	FUZE	M732A1	8861213	1.2B	0107	16	22.6
N464	1390-01-020-0096	FUZE	M732	8861213	1.1D	0408	16	22.6
N464	1390-01-137-5444	FUZE	M732	8861213	1.2D	0409	16	22.6
N464	1390-01-202-1710	FUZE	M732	8861213	1.2D	0409	16	
N525	1390-00-009-5571	PRIMER	M2A4	8860560	1.4G	0320	500	16.8
N525	1390-00-935-9234	PRIMER	M2A4	8860560	1.4G	0320	500	16.8

TABLE II

UN SERIAL NUMBER	PROPER SHIPPING NAME
0012	CARTRIDGES FOR WEAPONS, INERT PROJECTILE
0014	CARTRIDGES FOR WEAPONS, BLANK
0015	AMMUNITION, SMOKE
0048	CHARGES, DEMOLITION
0050	CARTRIDGES, FLASH
0054	CARTRIDGES, SIGNAL
0060	CHARGES, SUPPLEMENTARY, EXPLOSIVE
0105	FUSE, SAFETY
0106	FUZES, DETONATING
0107	FUZES, DETONATING
0131	LIGHTERS, FUSE
0168	PROJECTILES
0191	SIGNAL DEVICES, HAND
0197	SIGNALS, SMOKE
0257	FUZES, DETONATING
0276	CARTRIDGES, POWER DEVICE
0300	AMMUNITION, INCENDIARY
0301	AMMUNITION, TEAR PRODUCING
0312	CARTRIDGES, SIGNAL
0317	FUZES, IGNITING
0320	PRIMERS, TUBULAR
0325	IGNITERS
0335	FIREWORKS
0338	CARTRIDGES FOR WEAPONS, BLANK
0339	CARTRIDGES FOR WEAPONS, INERT PROJECTILE
0349	ARTICLES, EXPLOSIVE, N.O.S.
0408	FUZES, DETONATING
0409	FUZES, DETONATING
0410	FUZES, DETONATING
0454	IGNITERS